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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,905	11/06/2006	Makiko Kitazoe	029567-00010	5377

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EXAMINER
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CHEN, KEATH T

ART UNIT	PAPER NUMBER
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1792

NOTIFICATION DATE	DELIVERY MODE
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02/20/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DCIPDocket@arentfox.com  
IPMatters@arentfox.com  
Patent\_Mail@arentfox.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/591,905	<b>Applicant(s)</b> KITAZOE ET AL.	
	<b>Examiner</b> KEATH T. CHEN	<b>Art Unit</b> 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 10-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                      |                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                          | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/18/2008 has been entered.

### ***Response to Amendment***

1. Applicant's amendment, filed on 12/18/2008, in response to the rejection of claims 1-9 in the final office action mailed on 06/19/2008, by amending claims 1, 2, and 9 and adding new claim 19 is entered and will be discussed below.

### ***Election/Restrictions***

2. Claims 10-18 remain withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention II, there being no allowable generic or linking claim.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not

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described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The "without etching the catalytic body itself" critical or essential to the practice of the invention, but is not enabled by the disclosure.

In abstract, lines 2-3, "suppresses the corrosion-induced degradation of a catalytic body by a cleaning gas", and similarly in many places in the specification, indicating the etching can be lowered but not eliminated. Furthermore, there is no discussion of how the etching of the catalytic body can be totally eliminated in the specification. See *In re Mayhew*, 527 F.2d 1229, 1233, 188 USPQ 356, 358 (CCPA 1976).

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35 U.S. Code not included in this action can be found in a prior Office action.

**4. Claims 1-9 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishibashi (US 6375756, hereafter '756), in view of Bridges (US 5012868, hereafter '868) and Reale (US 5451754, hereafter '754).**

'756 teaches some limitations:

Claim 1: A self-cleaning catalytic chemical vapor deposition apparatus (Fig. 1, col. 4, line 59) which forms a thin film by a catalytic action of a resistance heated (by power source #30, col. 5, lines 11-13) catalytic body (#3, col. 5, lines 11-17) within a reaction chamber capable of being evacuated to a vacuum (col. 4, line 60), and a cleaning gas (abstract, however, this is intended use), and wherein the catalytic body

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has a temperature of between 1700° and less than 2000° C (hot element heated up to 2000° C, abstract; furthermore, this is intended use, as long as the hot element is capable of being heated to between 1700° and less than 2000° C, then it meets the claim).

Claim 19: A self-cleaning catalytic chemical vapor deposition apparatus (Fig. 1, col. 4, line 59) for forming a thin film by using a catalytic action of a resistance heated (by power source #30, col. 5, lines 11-13) catalytic body (#3, col. 5, lines 11-17) within a reaction chamber capable of being evacuated to a vacuum (col. 4, line 60), comprising: the catalytic body being heated between 1700 °C and less than 2000 °C hot element heated up to 2000° C, abstract; furthermore, this is intended use, as long as the hot element is capable of being heated to between 1700° and less than 2000° C, then it meets the claim); and a cleaning gas (abstract, however, this is intended use), wherein the apparatus is capable of (the apparatus is capable of the following) removing an adhering film which has adhered to the interior of the reaction chamber without etching the catalytic body itself on the basis of a radical species generated when the cleaning gas comes into contact with the resistance heated catalytic body and is decomposed, the bias voltage applied to the catalytic body, and a polarity of the bias voltage.

Applicant's claimed requirements "a cleaning gas", "wherein the apparatus removes an adhering film which has adhered to the interior of the reaction chamber without etching the catalytic body itself on the basis of a radical species generated when the cleaning gas comes into contact with the resistance heated catalytic body and is

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decomposed, the bias voltage applied to the catalytic body, and a polarity of the bias voltage”, and “wherein the catalytic body has a temperature of between 1700° and less than 2000° C” are considered intended use in the pending apparatus claims. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter, 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto, 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

Claim 2: The self-cleaning catalytic chemical vapor deposition apparatus according to claim 1, further comprising a radical species generator (plasma generation, col. 7, lines 45-48) which decomposes the cleaning gas into a radical species and introduces the radical species into the reaction chamber.

‘756 does not teach the other limitations of

Claim 1: The apparatus comprises a power supply to apply a bias voltage to the catalytic body and a changeover switch which changes the polarity of the bias voltage to be applied.

Claim 9: The self-cleaning catalytic chemical vapor deposition apparatus according to claim 1, further comprising a monitoring device which detects the

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occurrence of etching of the catalytic body itself on the basis of electric resistance of the catalytic body.

Claim 19: a power supply to apply a bias voltage to the catalytic body, a changeover switch that changes the polarity of the bias voltage to be applied.

'868 is an analogous art in the field of corrosion inhibition in a heating electrode (abstract), particularly in providing maximum corrosion protection over an extended working life at minimum cost (col. 3, lines 54-59). '868 teaches by applying a DC bias voltage to the heating circuit to inhibit corrosion (col. 4, lines 1-4) and a switch (#238, Fig. 3) to adjust positive or negative polarity (col. 8, lines 37-40) and an ability to maintain neutral potential (col. 9, lines 21-26). '868 further provides a current sensor (#55 in Fig. 1 or #251, Fig. 3, col. 9, lines 51-62) to control the corrosion inhibition polarity.

'754 is an analogous art in the field of controlling charge of substrate (abstract) particularly in sputtering metal film (col. 3, lines 52-53). '754 teaches a changeover switch which change polarity of the bias voltage, including ground, applied to the shield (col. 4, lines 30-39) to control the charge deposited on the substrate (#14).

At the time the invention was made, it would have been obvious to a person having ordinary skill in the art to have combined '868 and '754 with '756. Specifically, to have applied a bias voltage, as taught by '868, to the hot element (#3) in the apparatus of '756, and furthermore to have adopted the bias voltage switch as taught in Fig. 1 of '754 to switch the polarity as taught by '868. Furthermore, to have adopted a DC current

sensor, as taught by '868, to control the polarity of inhibition. This current sensor would have been responsive to the resistance of the catalytic body (hot element).

The motivation would have been to inhibit corrosion as taught in both '756 (col. 6, lines 19-26) and '868 (col. 4, lines 1-4) and to provide polarity switch capability as taught by '868 (col. 8, lines 37-40 and col. 9, lines 21-26).

The apparatus of the above combination would have the capability of supplying various gases and setting polarity according to the gases species of the claim limitations of claims 3-8 (all intended use).

### ***Response to Arguments***

Applicant's arguments filed 12/18/2008 have been fully considered but they are not persuasive.

5. Applicants retract previous argument (10/20/2008, the first three complete paragraphs of page 2) that "suppress" means "totally eliminate", see the second paragraph of page 7, and instead argue that "suppress" conform with the claim language "... without etching the catalytic body itself". This is found not acceptable, therefore, the previous 35 USC 112 rejection still stands.

Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed.



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Cir. 1999). The term “without etching the catalytic body itself” in claim 1 is used by the claim to mean “suppress”, while the accepted meaning is “totally eliminate.” The term is indefinite because the specification does not clearly redefine the term.

6. In regarding to 35 USC 103(a) rejection based on Ishibashi ('756), Bridges ('868), and Reale ('754) of claims 1-9, Applicants' arguments are:

a) Cleaning gas is part of the apparatus because Applicants claim it, and the cleaning gas is a physical entity and Office Action has the burden to show a combination with cleaning gas, see pages 8-9.

These arguments are found not persuasive.

The examiner maintains that cleaning gas is not part of the apparatus. The structure of cleaning gas is not part of the apparatus structure, just like the substrate being worked on having a solid structure and is not part of an apparatus.

To help Applicants thinking on this line of argument, the examiner reminds that it is a common knowledge to clean the apparatus using a cleaning gas and the term cleaning gas is not defined in Applicants' specification (a cleaning gas can be used for etching and/or deposition). The apparatus of the combined reference is well within the ordinary skill to be used with a cleaning gas. By the way, '756 clearly teaches a cleaning gas (in the abstract).

b) '756 affirmatively fails to disclose heated to less than 2000° C, see the last paragraph of page 9.

This argument is found not persuasive.

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'756 clearly teaches "hot element ... is heated up to 2000° C", "or higher after the chamber is exhausted". Before chamber is exhausted, it is up to 2000° C, which means less than 2000° C. Even after the chamber is exhausted, above or below 2000° C is optional.

In addition, this is intended use. Suppose '756 only teaches higher than 2000° C, the apparatus is still capable of operating at below 2000° C.

c) Applicants arguments on claims 3-8, again on identities of gases or mode operation as part of apparatus, and MPEP 2115 does not apply, see the last paragraph of page 10 to page 11.

This argument is found not persuasive.

The examiner maintains the MPEP 2115 applies because the cleaning gas is the material the apparatus works on, just as substrate is the material the apparatus works on.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEATH T. CHEN whose telephone number is (571)270-1870. The examiner can normally be reached on 6:30AM-3 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on 571-272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KEATH T CHEN/

Examiner, Art Unit 1792

/Ram N Kackar/

Primary Examiner, Art Unit 1792